

Charles Replacement Door Kit

97-002467-A

General Description and Installation

- 1. GENERAL INTRODUCTION1
 - 1.1. Document Purpose1
 - 1.2. Product Purpose.....1
- 2. INSTALLATION1
 - 2.1. Inspecting the Product.....1
 - 2.2. Disassembling the Packaging.....2
 - 2.3. Following and Using Safety Precautions.....2
 - 2.4. Obtaining Tools and Equipment.....2
 - 2.5. Installing the Kit.....2
 - 2.6. Connecting the Thermal Unit6
 - 2.7. Completing the Installation6
 - 2.8. HVAC Operation6
- 3. PERIODIC MAINTENANCE.....6
- 4. TECHNICAL ASSISTANCE AND REPAIR SERVICE.....7
- 5. WARRANTY & CUSTOMER SERVICE7
- 6. SPECIFICATIONS.....7

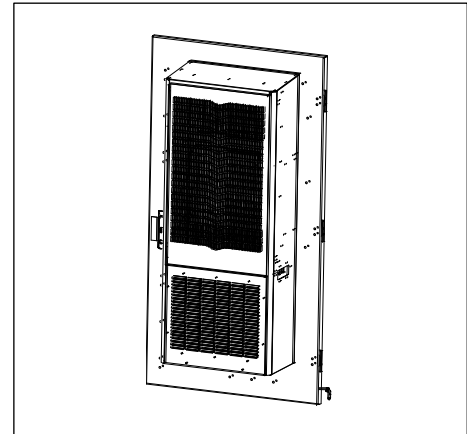


Figure 1 Front Door Kit

1. GENERAL INTRODUCTION

1.1. Document Purpose

This document provides general information for the replacement door kit for select models within the Charles Modular Cabinet series. Figure 1 shows the replacement door kit.

-NOTE-

Hereafter, the Charles Modular Cabinets MC-12CHFNE1, MC-12CHFNFNENE1, MC-12CHFNM1, and MC-12CHFNFNENM1 will be referred to as the "MC-1." The 97-002467-A replacement door kit will be referred to as the "kit."

1.2. Product Purpose

The kit includes a replacement front door for any left-swing front door on the MC-1 bays. The kit includes a 12k BTU AC powered HVAC unit.

2. INSTALLATION

2.1. Inspecting the Product

The kit is shipped upright on a pallet, in a vertical support frame. Follow the instructions in the next section to unpack the unit.

-INSPECTION NOTE-

Visually inspect the unit for damages prior to installation. If the equipment was damaged in transit, immediately report the extent of the damage to the transportation company.

2.2. Disassembling the Packaging

CAUTION: Keep the door kit upright at all times. If the HVAC thermal system is left lying down, then the compressor oil can flow out of its reservoir, which will impair the system operation when it is turned on. It is recommended to make sure the replacement door has been upright for 24 hours prior to powering up the HVAC.

1. Locate the cross braces on the back of the kit replacement door (Figure 2).
2. Support the kit so that it remains upright while removing the screws that hold the cross braces in place (two screws per cross brace).
3. When both cross braces have been removed, use proper lifting equipment to move the kit off the pallet. Keep the kit upright when transporting.
4. Dispose of packing material per company practice.

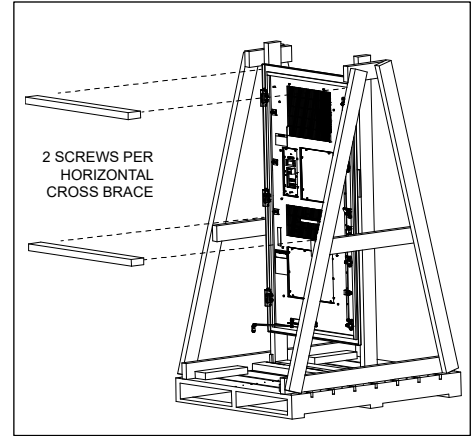


Figure 2
Disassemble the Packing Frame

2.3. Following and Using Safety Precautions

Read the following site and safety tips, cautions, and warnings, then proceed with the paragraphs that follow.

- For installation, follow all National Electrical Codes (NEC) ANSI/NFPA 70, local, environmental, workplace, and company codes, safety procedures, and practices.
- Minimum spacing between the accessories and components and the housing for ITE equipment shall be maintained for safe operation of the equipment when installed in accordance with NEC ANSI/NFPA 70.
- Read all instructions, warnings and cautions on the equipment and in the documentation shipped with the product.
- Do not place this product on weak or unstable surfaces which may allow the product to fall, resulting in potentially serious damage(s) to persons or product.
- Only authorized trained personnel shall install the kit.

2.4. Obtaining Tools and Equipment

Obtain the following recommended or needed items for installing the kit.

- Protective and/or insulated work gloves
- Safety glasses
- Slotted, hex, and Phillips screwdrivers
- Torque wrench
- Wrench for 1/4"-20 nuts
- Hammer or mallet

2.5. Installing the Kit

	WARNING	<p>Improper hoisting equipment and unsafe lifting procedures can result in serious injury or death. Charles recommends at least two people to lift the kit. Follow local safety practices.</p> <p>Turn off all power connections to the MC-1 before beginning this procedure.</p>
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2.5.1. Torque Requirements

Torque all hardware as shown below (unless otherwise noted). These values apply to SAE Grade 1 & 2 Low Carbon Steel, ASTM A307 Low Carbon Steel, and Stainless Steel Grade 18-8.

Thread Size	In-lbs	Ft-lbs
4-40	4±10%	
6-32	8±10%	
8-32	16±10%	
10-32	26±10%	
12-24	50±10%	
1/4-20/M6	60±5%	5±5%
5/16-18	125±5%	10.4±5%
3/8-16	180±5%	15.0±5%
1/2-13	500±2%	41.7±2%
5/8-11	1000±1%	83.3±1%

2.5.2. Removing the Existing Door

1. Remove the two nuts that connect the wind latch to the MC-1. Save the nuts for later use.
2. Disconnect the grounding strap from the door. Save the nut for later use.
3. Locate the hinge pin (Figure 3). Remove the retainer clip and lift the hinge pin out of the hinge (Figure 4, hinge pin shaded in gray). A hammer or mallet may be necessary to move the pin upward. Repeat for each hinge.
4. Remove the door from the MC-1 (Figure 5). The hinge plates remain on the door. The hinge bases remain on the MC-a door frame.
5. Using a permanent marker, copy identifying information from the label on the existing door (e.g. part number, serial number, etc.) onto the blank label on the replacement door, if available, or directly onto the door surface. Discard or store the removed door and hinges according to local practice.

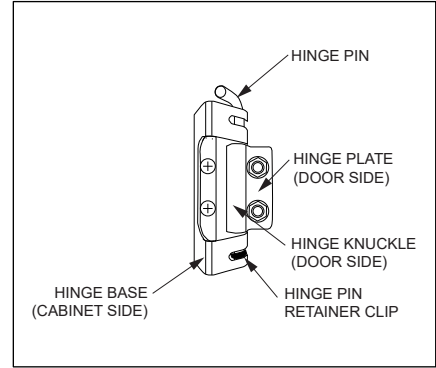


Figure 3 Hinge Assembly

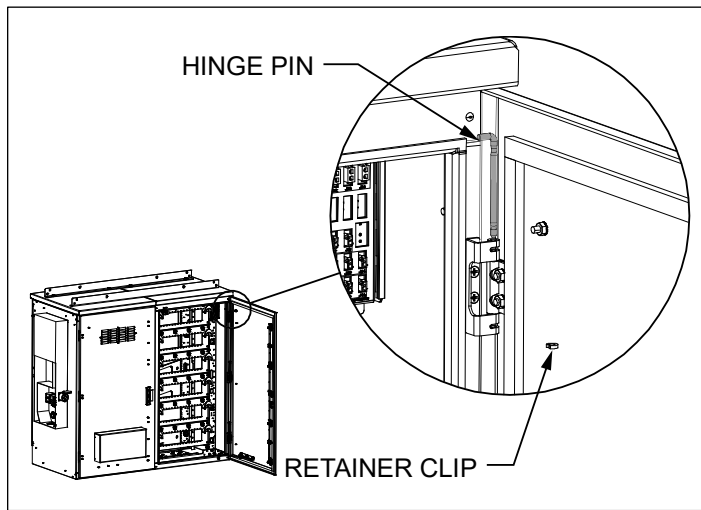


Figure 4 Remove Hinge Pin

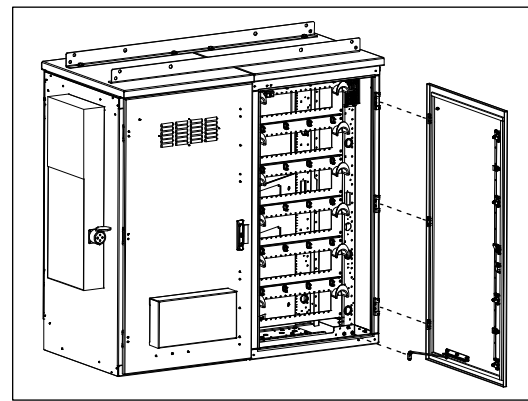


Figure 5 Remove Door

2.5.3. Mounting the Kit onto the MC-1

1. The kit is shipped with the entire hinge assemblies attached to the door. Remove the hinge bases from the hinge plates. Discard the hinge bases. The kit will use the hinge bases that are already on the MC-1 door frame.
2. **Use two people to move the kit door into position on the MC-1.** Use local safety practice for lifting and moving the door. Ensure that the hinge plates on the door are aligned with the hinge bases on the MC-1. A third person may be necessary to ensure proper alignment.
3. While supporting the door weight, secure the door into position by pushing the hinge pins through the hinge knuckles into the lowest pin position. A hammer or mallet may be necessary to lower the hinge pin all the way through the knuckle. Secure the pin by placing the retainer clip in the bottom position (Figure 3). Secure the top hinge first, then the bottom, then the middle.
4. Connect the wind latch on the replacement door to the MC-1 door frame using hardware removed previously.
5. Connect the grounding strap to the replacement door using hardware removed previously.

2.5.4. Mounting the Cutoff Switch

The MC-1 is equipped with a door intrusion alarm switch at both the front and rear doors. This switch is mounted onto the MC-1 with a metal plate.

The kit includes two new mounting plates and two HVAC cutoff switches, for the front and rear doors. The existing 4-wire door intrusion switch fits into the opening at the right side of the plate, and the new HVAC cutoff switch fits into the left opening. See Figure 6 for mounting hole position numbers.

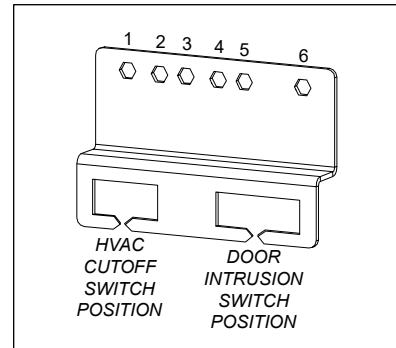


Figure 6
Mounting Hole Positions

1. Open the front door, verify the breaker for the door lights is off, and remove the intrusion alarm and light wiring from the door intrusion switch by pulling the connectors. Remove the switch from the existing mounting plate (Figure 7). Set the switch aside for re-installation.
2. Remove the two nuts from the studs at the back of the mounting plate. Keep the nuts. Store or discard the mounting plate per company practice.
3. Push the door intrusion alarm switch (removed previously) into the right side opening in the new mounting plate until it clicks. Push an HVAC 2-wire cutoff switch into the left side opening.
4. Use the two nuts removed previously to mount and secure the new plate onto the same pair of studs that the old plate occupied (studs are on the inside of the door frame). Use the mounting hole positions that will place the plate as close to the center of the bay as possible (Figure 6).
5. Open the rear door and repeat this procedure for the rear door intrusion switch.

Note: The mounting plate must be mounted as close as possible to the center of the MC-1 bay. If the plate is mounted symmetrically on the studs or too close to the side, then there will be interference between the latching hardware and the switches.

6. Wire the HVAC, the alarm wiring, and the door switches as shown in Figures 8 and 9.

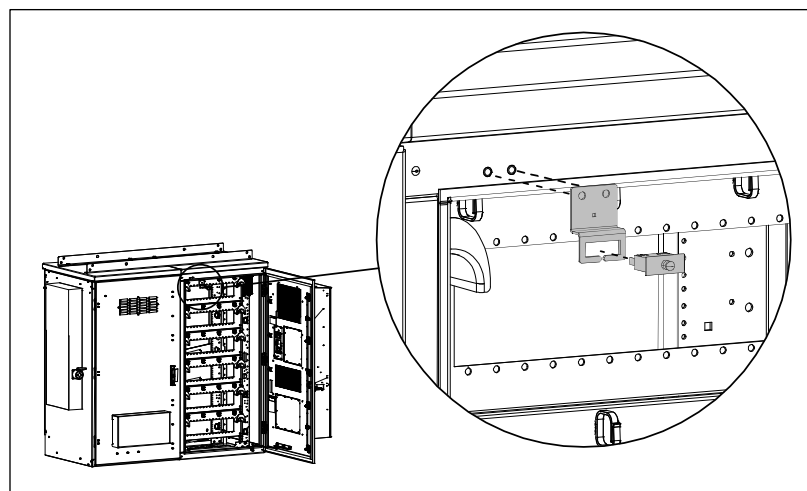


Figure 7 Remove Mounting Plate from MC-1

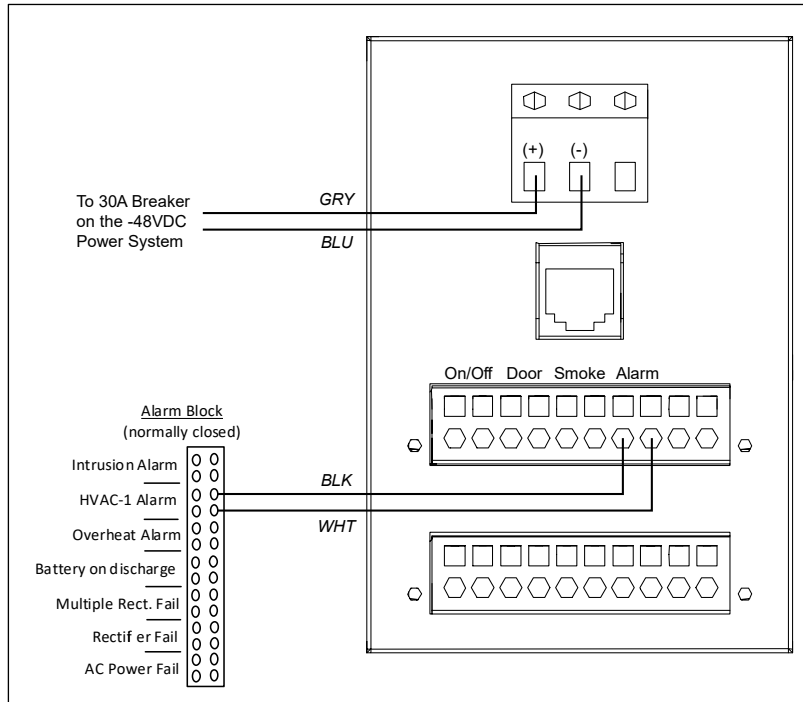


Figure 8 HVAC Wiring Terminals

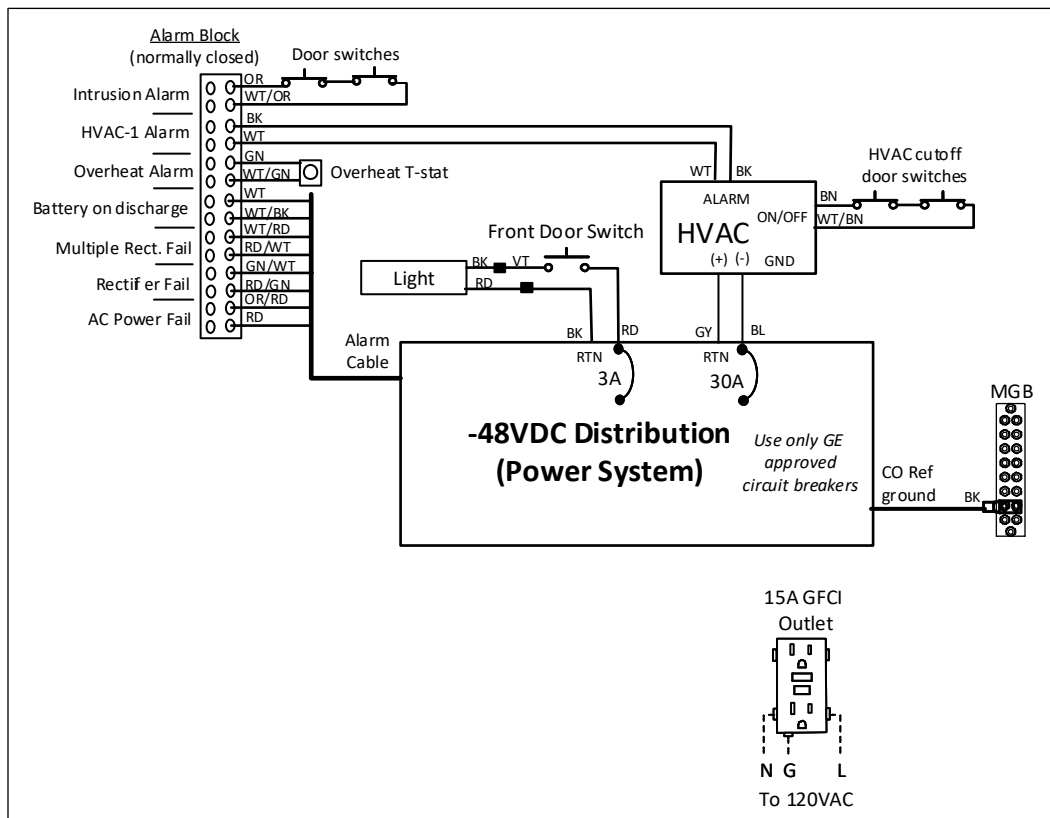


Figure 9 Electrical Diagram of Complete Installation

2.6. Connecting the Thermal Unit

If the HVAC will not be connected to a cutoff switch, then place a jumper on the ON and OFF positions on the HVAC terminal block to bypass the cutoff switch. **Ensure that power to the MC-1 is still off before installing the jumper!**

2.7. Completing the Installation

Connect the new alarm wires to the MC-1 alarm terminal block (Figure 9). When alarm wiring is complete, apply power to the MC-1.

2.8. HVAC Operation

The 12000BTU AC powered HVAC compressor and fans are PID (proportional integral derivative) controlled. The compressor turns on at 33°C at low speed and will increase/decrease speed as needed to maintain this temperature. The compressor turns off when the internal temperature reaches 28°C. The internal fan is always on at low speed (30%) to continually circulate heat within the cabinet. The external fan turns on/off with the compressor. Both fans' speed increase as needed with increasing internal cabinet temperature. In addition, the HVAC includes a built-in 1000W heater for cold temperature operation. HVAC settings for the compressor, fans, heater, and temperature alarms are defined below and are based off the cabinet's interior temperature. The MC-1 is equipped with a cutoff switch that shuts off the HVAC compressor when a door is opened to minimize condensation buildup on the coils.

The maximum airflow amount supplied to the equipment by the HVAC is 500CFM. For further information, refer to the HVAC documentation that ships with the MC-1

-NOTE-

Changing the cooling or heating cycles' default factory set points can lead to system performance issues, such as equipment failures, increased power use, unnecessary alarms, noise, condensation build up, compressor or fan failure caused by excessive runtimes and vibration.

Avoid placing items in front of the HVAC's return and supply vents. Maintain a minimum of 6" clearance to enable proper air flow.

HVAC Compressor/Fans/Heater/Alarms Setting	Internal	External
Compressor Turn-on Setting	33°C	N/A
Compressor Turn-off Setting	28°C	N/A
Fan Turn-on Setting	-40°C	33°C
Heater ON Setting (70% Fan Speed)	8°C	N/A
Heater OFF Setting	13°C	N/A
High Temp Alarm Setting	65°C	N/A
Low Temp Alarm Setting	0°C	N/A

3. PERIODIC MAINTENANCE

In the event that the enclosure needs to be opened in freezing conditions, a narrow, pointed metallic object such as a screwdriver or chisel, along with a non-metallic device such as a rubber mallet, may be used to remove excessive ice buildup around the door and locking mechanism. Use a commercial aerosol de-icer spray to free up locks and latches if needed.

Refer to the HVAC manual supplied with the unit for periodic maintenance requirements.

4. TECHNICAL ASSISTANCE AND REPAIR SERVICE

For questions on product repair or if technical assistance is required, contact Charles Technical Support.

847-806-8500
techserv@charlesindustries.com (email)
<http://www.charlesindustries.com/techserv.htm>

5. WARRANTY & CUSTOMER SERVICE

Charles Industries LLC offers a one-year warranty on the kit product. The Charles warranty is limited to the operation of the kit hardware as described in this documentation and does not cover equipment that may be integrated by a third party. The terms and conditions applicable to any specific sale of product shall be defined in the resulting sales contract. For questions on warranty or other customer service assistance, contact your Charles Customer Service Representative.

847-806-6300
mktserv@charlesindustries.com (email)
http://www.charlesindustries.com/main/telecom_sales_support.htm

6. SPECIFICATIONS

Physical	
Weight	Approx. 150 lbs.
Materials	0.125" aluminum
Color	Off-white
Thermal	
HVAC System	230VAC powered Vikinor VAK-3000-AC
Cooling Capacity	12,000 BTU
Kits and Replacement Parts	
Touch-up Paint	02-000290-0
Swing Handle	39-000148-0

Table 1 Kit Specifications